AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A seal mechanism for confining a chemical reaction in a reaction vessel having an inner volume that is accessible through a penetrable, self-sealing diaphragm covering an opening of the reaction vessel and through which reagents are at least one of injected and~~/or~~ extracted~~;~~, said seal mechanism comprising

a movable plunger cooperating with said self-sealing diaphragm, said plunger being ~~that is~~ reversibly operable between a retracted position wherein the inner volume of the reaction vessel is accessible through the diaphragm, and an operational position in abutting contact with the diaphragm, wherein

the plunger is effective to counteract an outward deflection of the diaphragm caused by an increase of internal pressure in the vessel.

2. (Original) The seal mechanism of claim 1, wherein the plunger is pivotally movable about an axis (C).

3. (Original) The seal mechanism of claim 1, wherein the plunger is driven for a linear motion in axial direction of the vessel.

4. (Original) The seal mechanism of claim 1, wherein the plunger is driven in a motion having a generally axial component and a generally radial component with respect to the axial direction of the vessel.

5. (Currently Amended) The ~~seal mechanism~~apparatus of claim ~~1~~21, wherein a pressure detector is supported on the plunger.

6. (Currently Amended) The ~~seal mechanism~~apparatus of claim 5, wherein a pressure monitor is connected with the plunger and by which the plunger is controlled to apply an external pressure on the diaphragm that is related to the

detected internal pressure generated by the chemical reaction in the reaction vessel.

7. (Original) The seal mechanism of claim 2, wherein a linear drive unit controls the pivoting motions and applied pressure of the plunger via a link mechanism.

8. (Currently Amended) An apparatus for performing chemical reactions, ~~wherein~~ comprising:

one or more reaction vessels ~~are~~ supported and successively ~~moved~~ movable to a position for microwave energy exposure, each reaction vessel having a penetrable, self sealing diaphragm covering an opening of the reaction vessel;~~, the apparatus having~~

a dispenser capable of penetrating the self-sealing diaphragm for at least one of injection and~~/or~~ extraction of reagents into the reaction vessel where the chemical reaction takes place~~, said apparatus comprising~~; and

a movable plunger ~~arranged~~ cooperating with said one or more reaction vessels in the microwave exposure position, the plunger being reversibly operable between a retracted position wherein an inner volume of the vessel is accessible through the diaphragm, and an operational position in abutting contact with the self sealing diaphragm, wherein

the plunger is effective to counteract an outward deflection of the diaphragm caused by an increase of internal pressure in the vessel.

9. (Original) The apparatus of claim 8, wherein the plunger is pivotally supported to be pivoted about an axis (C).

10. (Previously Presented) The apparatus of claim 9, wherein the plunger is associated with a linear driver by which the plunger is pivoted via a link mechanism.

11. (Previously Presented) The apparatus of claim 9, wherein a pressure detector is supported on the plunger.

12. (Previously Presented) The apparatus of claim 10, wherein a pressure monitor is connected with the plunger.

13. (Previously Presented) The apparatus of claim 12, wherein the pressure monitor continuously dimensions the external pressure applied by the plunger relative to the detected internal pressure in the reaction vessel.

14. (Currently Amended) An ~~The apparatus of claim 8, incorporated in an~~ automated system for performing chemical reactions, the system comprising:

control logic and operator interface for monitoring and evaluation of the chemical reactions; and

the apparatus of Claim 8.

15. (Original) A method for confining a chemical reaction in a reaction vessel that is accessible through a self-sealing diaphragm covering an opening of the reaction vessel, the method comprising the steps of injecting/extracting reagents through the self-sealing diaphragm, and applying a controllable counter pressure to an external side of the diaphragm that counteracts an outward deflection of the diaphragm caused by an increase of internal pressure in the vessel.

16. (Previously Presented) The method of claim 15, wherein a plunger is pivoted about an axis (C) between a retracted position wherein the diaphragm is accessible for injection and/or extraction by a dispenser, and an operational position wherein the plunger is controlled to apply an external pressure in abutting contact with the self-sealing diaphragm.

17. (Original) The method of claim 15, wherein the internal pressure of the vessel is monitored.

18. (Original) The method of claim 17, wherein the external pressure applied by the plunger is continuously dimensioned in relation to the detected internal pressure.

19. (Currently Amended) A seal mechanism for confining a chemical reaction in a reaction vessel having an inner volume that is accessible through a penetrable, self-sealing diaphragm covering an opening of the reaction vessel and through which reagents are at least one of injection and extraction, said mechanism including a movable plunger cooperating with a self-sealing diaphragm, said plunger being reversibly operable between a retracted position wherein the inner volume of a reaction vessel is accessible through the diaphragm, and an operational position in abutting contact with the diaphragm, wherein the plunger is effective to counteract an outward deflection of the diaphragm caused by an increase of internal pressure in the vessel, said seal mechanism confining the chemical reaction in the reaction vessel according to the method of claim 15.

20. (Currently Amended) An apparatus for confining a chemical reaction ~~in a reaction vessel~~in one or more reaction vessels, the apparatus including the one or more reaction vessels supported and successively movable to a position for microwave energy exposure, each reaction vessel having a penetrable, self sealing diaphragm covering an opening of the reaction vessel, a dispenser capable of penetrating the self-sealing diaphragm for at least one of injection and extraction of reagents into the reaction vessel where the chemical reaction takes place, and a movable plunger cooperating with said one or more reaction vessels in the microwave exposure position, the plunger being reversibly operable between a retracted position wherein an inner volume of the vessel is accessible through the diaphragm, and an operational position in abutting contact with the self sealing diaphragm, wherein the plunger is effective to counteract an outward deflection of the diaphragm caused by an increase of internal pressure in the vessel, said apparatus confining the chemical reaction in the one or more reaction vessels according to the method of claim 15.

21. (New) An apparatus, comprising:

the sealing mechanism of claim 1; and

the reaction vessel having the inner volume that is accessible through the diaphragm covering the opening of the reaction vessel and through which reagents are at least one of injected and extracted.